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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/980,658	03/29/2002	Herman DeWeerd	60132-079	6765

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EXAMINER

SNAY, JEFFREY R

ART UNIT PAPER NUMBER

1743

DATE MAILED: 06/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/980,658

Applicant(s)

DEWEERD ET AL.

Examiner

Jeffrey R. Snay

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 March 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>7/25/02, 2/25/02</u> | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 1-20 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. The presently recited "locator for determining the location of the first drive mechanism relative to the specimen" (emphasis added) is not enabled by the specification.

The specification discloses an optical scanning device in which the incident signal is scanned along one axis by a first drive mechanism and the specimen is indexed along another axis by a second drive mechanism, such that the surface of a sample support, e.g. a biochip, can be interrogated. The specification further teaches the provision of a position indicator associated with the first drive mechanism. However, the specification fails to disclose or enable any structure of operation of the device by which an indication obtained by the position indicator can be related to the specimen.

In particular, the specification teaches three embodiments with respect to the position indicator. The first embodiment, represented in Figure 3A, comprises a linear grating scale mounted to the first drive mechanism. In this embodiment, the position of

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the incident light is read from the grating scale and thus can be located relative to a reference mark on the grating scale. No relation between the grating scale and the specimen (which is also translatable along a different axis) is described.

The second embodiment, represented in Figure 3B, comprises a laser range finder. Specifically, the specification teaches that a laser beam is transmitted to a sensor, which sensor measures either the time of travel of the laser beam or the distance of the first drive mechanism from the sensor. Again, no relation between the laser range finder and the specimen (which is also translatable along a different axis) is described. Furthermore, the operation of the laser range finder to locate the position of the first drive mechanism is also not enabled. The specification fails to teach or describe any association of the laser (whether physical, optical or otherwise) with the first drive mechanism.

Finally, the third embodiment, represented in Figure 3C, comprises an interferometer. The specification teaches only that the "interferometer 108 signals the controller the location of the first drive mechanism 50 as interpolated by the wavelength of the laser beam 107" (page 6, lines 17-19). This embodiment is not enabled because (i) no relation between the interferometer and the specimen (which is also translatable along a different axis) is described, (ii) no association of the interferometer (whether physical, optical or otherwise) with the first drive mechanism is described, and (iii) the specification fails to adequately describe how an interferometer would be structured and position so as to enable the determination of the location of either the laser or the first drive mechanism.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gordon (WO 96/09548) in view of Igarashi (WO 97/11459).

The examiner's best understanding of the presently claimed invention, in light of the enablement deficiencies described above, is that an optical scanning device and method is augmented with a position indicator in which a position of the optical readhead is determined as it is scanned across a sample surface. Specific position indicators include a linear grating scale, laser range finder and interferometer.

Gordon discloses an optical scanner for conducting analysis of a plurality of samples on a support (see Figure 3). Gordon further teaches the provision of calibration marks on the support, which calibration are interrogated by the light source in order to accurately determine the location of the readhead relative to the substrate. See the Abstract and claims 1, 3, 5 and 10. Gordon fails to teach the provision of a linear grating scale, laser range finder or interferometer for similarly enabling such position determination.

Igarashi discloses a method for controlling a laser beam incident on an rotating disc. It is noted that U.S. Patent 6203968 is relied upon here as an English language equivalent of the cited WO 97/11459 patent document. Igarashi specifically acknowledges the use of either a linear encoder or a laser interference range finder for the purpose of accurately positioning a laser source relative to the disc (col. 2, lines 57-64). It would have been obvious to one of ordinary skill in the art to utilize a linear encoder or laser interference range finder (as per the teaching of Igarashi) as either a substitute or additional mechanism in the apparatus and method of Gordon for providing desired determination of laser position on the sample substrate being investigated.

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7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrey R. Snay whose telephone number is (571) 272-1264. The examiner can normally be reached on Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill A. Warden can be reached on (571) 272-1267. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Jeffrey R. Snay
Primary Examiner
Art Unit 1743

jrs